

AFFADAVIT (Under 37 CFR § 1.132)

Application	
Inventor: Robert A. Gonsalves	Application No. 10/798,004
Art Unit: 2862	Examiner: Luong T. Nguyen
Title: A video camera utilizing sequential diversity imaging for image clarification	

TO THE COMMISSIONER OF PATENTS AND TRADEMARKS, Washington DC 20231

I, Gordon D. Love, hereby declare that I am a specialist in applied optics technology with both a Bachelor of Science and Ph.D. in physics (from Durham University, UK, 1988 and 1991). I am also Chair of the UK Institute of Physics' Optical Group, a board member of the European Optical Society, and a member of the Optical Society of America. I am the author of over 100 optical publications;

that I am a co-inventor of US patent 6,107,617, entitled, "Liquid crystal active optics correction for large space based optical systems";

that I have read and understood the subject Application and the rejections by the Examiner in his Office Action dated October 30, 2007, in particular, the rejection starting on page 5 which states, "Claims 4, 7, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Love et al. (US 6,107,617)"; and

that I believe that the subject Application is substantially different from Love et al. and that Claims 4, 7, and 9 of the Application are not anticipated by Love et al. for the following reasons:

Love et al. uses a Phase Diversity wavefront sensor to control an Adaptive Optics (AO) device, which corrects the aberrations in an optical system. The wavefront sensor uses two images, one in-focus and the other out-of-focus. Both of these images are indicated in Figures 1 and 3 of Love et al. The out-of-focus image contains defocus, "a known induced aberration," which is the diversity between the two images.

In the subject Application no out-of-focus image is needed. It uses adjacent images from a sequence of adapted, in-focus images of an object which is distorted by time-varying optical aberrations, the change in the AO between the adjacent images as a diversity, and a sequential diversity processor, to calculate the control signal for the AO. The AO change is not "a known induced aberration," as in Love et al. In my opinion, it is not obvious that changes in the AO to correct a time-varying optical aberration can also function as the diversities needed by the sequential diversity processor.

I also declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that all such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signature: _____

Gordon D. Love

10th Jan 2008
Date

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U.K.